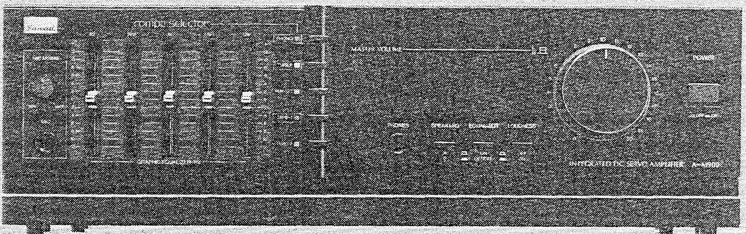
SERVICE MANUAL

INTEGRATED SERVO AMPLIFIER

SANSUI A-M900



NOTE

A-M900 is additional model which external appearances are different from those of A-M99.

This manual contains OTHER PARTS LIST, PACKING LIST and ACCESSORY LIST in which changed parts are printed with bold-face.

For other parts list, refer to A-M99 service manual previously issued.

Sansui

SANSUI ELECTRIC CO., LTD.

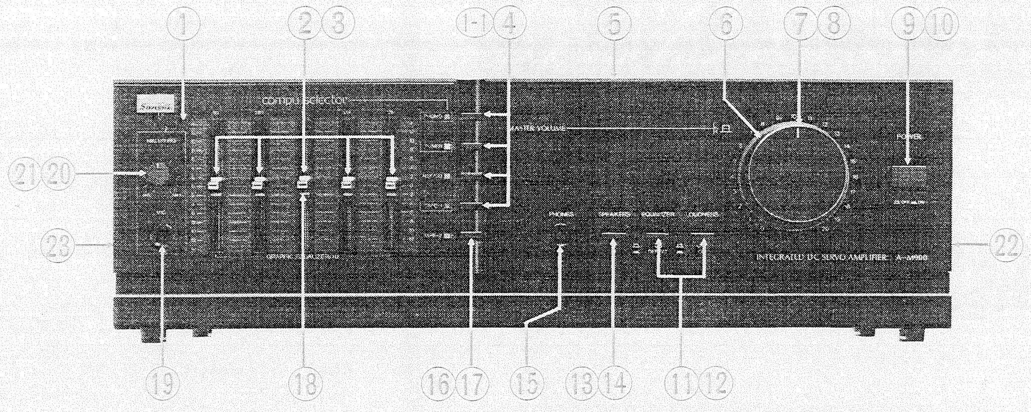
•SPECIFICATIONS

Power output
Min. RMS, both channels driven, from 20 to 20,000 Hz with no more than 0.07% total harmonic distortion.
70 watts per channel into 8 ohms.
Load impedance............. 8 ohms
Total harmonic distortion
.... less than 0.07% at or below rated min. RMS power output
Frequency response (at 1 watt)
.... 10 to 60,000 Hz/ +0.5 dB, −2 dB
RIAA curve deviation (PHONO, 30 Hz to 20 kHz)
.... +0.5 dB, −0.5 dB
Input sensitivity and impedance
(1 kHz, for rated power output))
PHONO.................... 2.5 mV/47 kilohms
(Max. input capability: 150 mV at 1 kHz, less than 0.5% total harmonic distortion)
TUNER, TAPE PLAY (1, 2), AUX/CD
.... 150 mV/47 kilohms
MIC .... 0.5 mV/10 kilohms
Output level (1 kHz)
TAPE REC.................. 150 mV into 47 kilohms
Signal to noise ratio (short-circuit, A-network)
PHONO.................... 72 dB
TUNER, TAPE PLAY (1, 2), AUX/CD
.... 100 dB
Power requirements
Power voltage............. 120/220/240 V (50/60 Hz)
For U.S.A. & Canada
.... 120 V (60 Hz)
Power consumption.... 230 watts 280 VA Rated
350 watts Maximum
Dimensions..................... 345 mm (13-5/8") W
111 mm (4-3/8") H
234 mm (9-1/4") D
Weight........................... 5.4 kg (11.9 lbs.) net
6.2 kg (13.7 lbs.) packed

* Design and specifications subject to changes without notice for improvements.
* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors

1. OTHER PARTS

•Front View

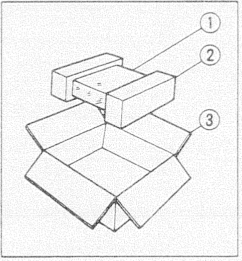


Parts List

Parts No.	Stock No.	Description
1	47732400	Front Panel Ass'y (with Push Knob 1-1, PHONO·TUNER·AUX/DA·TAPE)
2	47744200	Slide Knob, GRAPHIC EQUALIZER
3	46834600	250kΩ×2 Slide V.R., GRAPHIC EQUALIZER
4	46396700	Push SW., PHONO·TUNER·AUX/DA·TAPE-1
5	47560400	Bonnet (XX,UL,CSA)
	47560500	Bonnet (EU,BS,AS)
6	47557200	Knob, MASTER VOLUME (Right)
7	47557100	Knob, MASTER VOLUME (Left)
8	46555900	150kΩX2 V.R., MASTER VOLUME
9	47157800	Push Knob, POWER
⚠10	46364300	Push SW., POWER
11	47560300	Push Knob, LOUDNESS·EQUALIZER
12	46556400	Push SW., LOUDNESS·EQUALIZER
13	47538200	Push Knob, SPEAKERS
14	46361000	Push SW., SPEAKERS
15	24306200	Jack, PHONES
16	47560200	Push Knob, TAPE-2
17	46556300	Push SW., TAPE-2
18	46176900	L.E.D TLS-123 (Red), GRAPHIC EQUALIZER
	or 46470200	L.E.D SEL2210S (Red), GRAPHIC EQUALIZER
19	46838700	Jack, MIC
20	07895410	Knob, MIC
21	46834700	20kΩ (A) V.R., MIC
22	47491020	Side Panel (Right)
23	47490910	Side Panel (Left)

2. PACKING LIST

Parts No.	Stock No.	Description
1	47859000	Vinyl Cover
2	47187650	Styrofoam Packing
3	47937700	Carton Case



3. ACCESSORY LIST

Stock No.	Description
46979600	Operating Instruction
46983300	Operating Sheet

Sansui

SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.: Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-256) Printed in Japan (456320M) <Stock No. 36516300>

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SERVICE MANUAL

INTEGRATED SERVO AMPLIFIER

SANSUI A-M99

INTEGRATED DC SERVO AMPLIFIER A-M99
GRAPHIC EQUALIZER

CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

Sansui

SANSUI ELECTRIC CO., LTD.

•Specifications

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz with no more than 0.07% total harmonic distortion.

70 watts per channel into 8 ohms.

Load impedance	8 ohms
Total harmonic distortion	less than 0.07% at or below rated min. RMS power output
Frequency response (at 1 watt)	10 to 60,000 Hz/+0.5 dB, −2 dB
RIAA curve deviation (PHONO, 30 Hz to 20 kHz)	+0.5 dB, −0.5 dB
Input sensitivity and impedance (1 kHz, for rated power output))	
PHONO	2.5 mV/47 kilohms
(Max. input capability: 150 mV at 1 kHz, less than 0.5% total harmonic distortion)	
TUNER, TAPE PLAY (1, 2), AUX/DA	150 mV/47 kilohms
MIC	0.5 mV/10 kilohms
Output level (1 kHz)	
TAPE REC	150 mV into 47 kilohms
Signal to noise ratio (short-circuit, A-network)	
PHONO	72 dB
TUNER, TAPE PLAY (1, 2), AUX/DA	100 dB
Power requirements	
Power voltage	120/220/240 V (50/60 Hz)
For U.S.A. & Canada	120 V (60 Hz)
Power consumption	230 watts 280 VA Rated 350 watts Maximum
Dimensions	345 mm (13-5/8″) W 111 mm (4-3/8″) H 234 mm (9-1/4″) D
Weight	5.4 kg (11.9 lbs.) net 6.2 kg (13.7 lbs.) packed

* **Design and specifications subject to change without notice for improvements.**

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CAUTION

1. The symbols, UL, CSA, BS, UK, EU, AS and XX on the parts list and the schematic diagram mean followings respectively.

UL........................ Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)
CSA..................... Manufactured for Canadian market.
BS, UK .... Manufactured for United Kingdom market.
EU .... Manufactured for European market.
AS........................ Manufactured for Australian market.
XX........................ Standard Version.
NON MARK .... Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

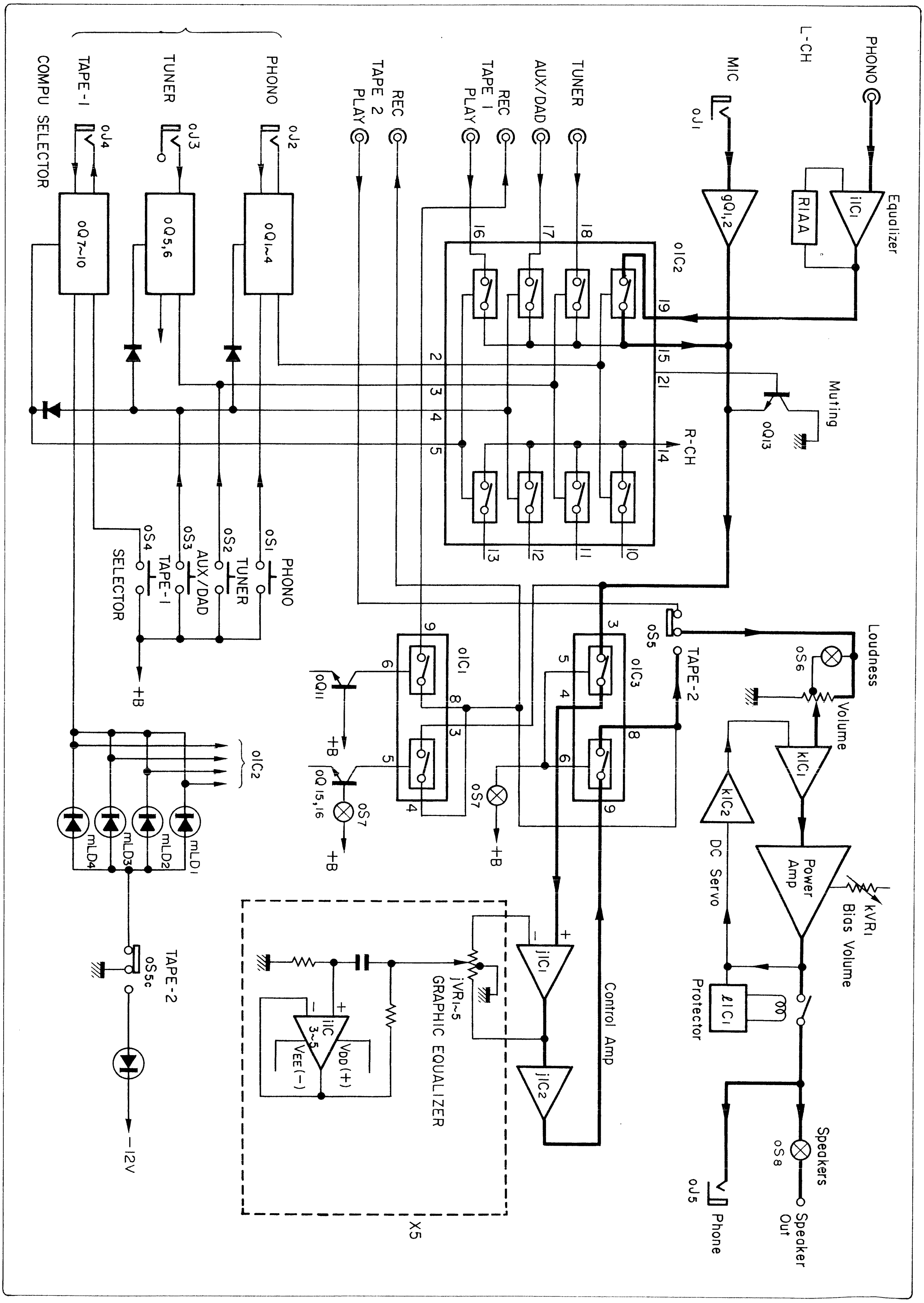
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

4. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R.	: Carbon Resistor	E.B.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ce.R.	: Cement Resistor	Ta.C.	: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C.	: Film Capacitor
F.R.	: Fusing Resistor	M.P.	: Metalized Paper Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C.	: Polystyrene Capacitor
A.R.	: Array Resistor	G.C.	: Gimmic Capacitor
C.C.	: Ceramic Capacitor	A.C.	: Array Capacitor
C.T.	: Ceramic Capacitor, Temoerature Compensation	V.R.	: Variable Resistor
E.C.	: Electrolytic Capacitor	S.V.R.	: Semi Variable Resistor
E.L.	: Low Leak Electrolytic Capacitor	SW.	: Switch

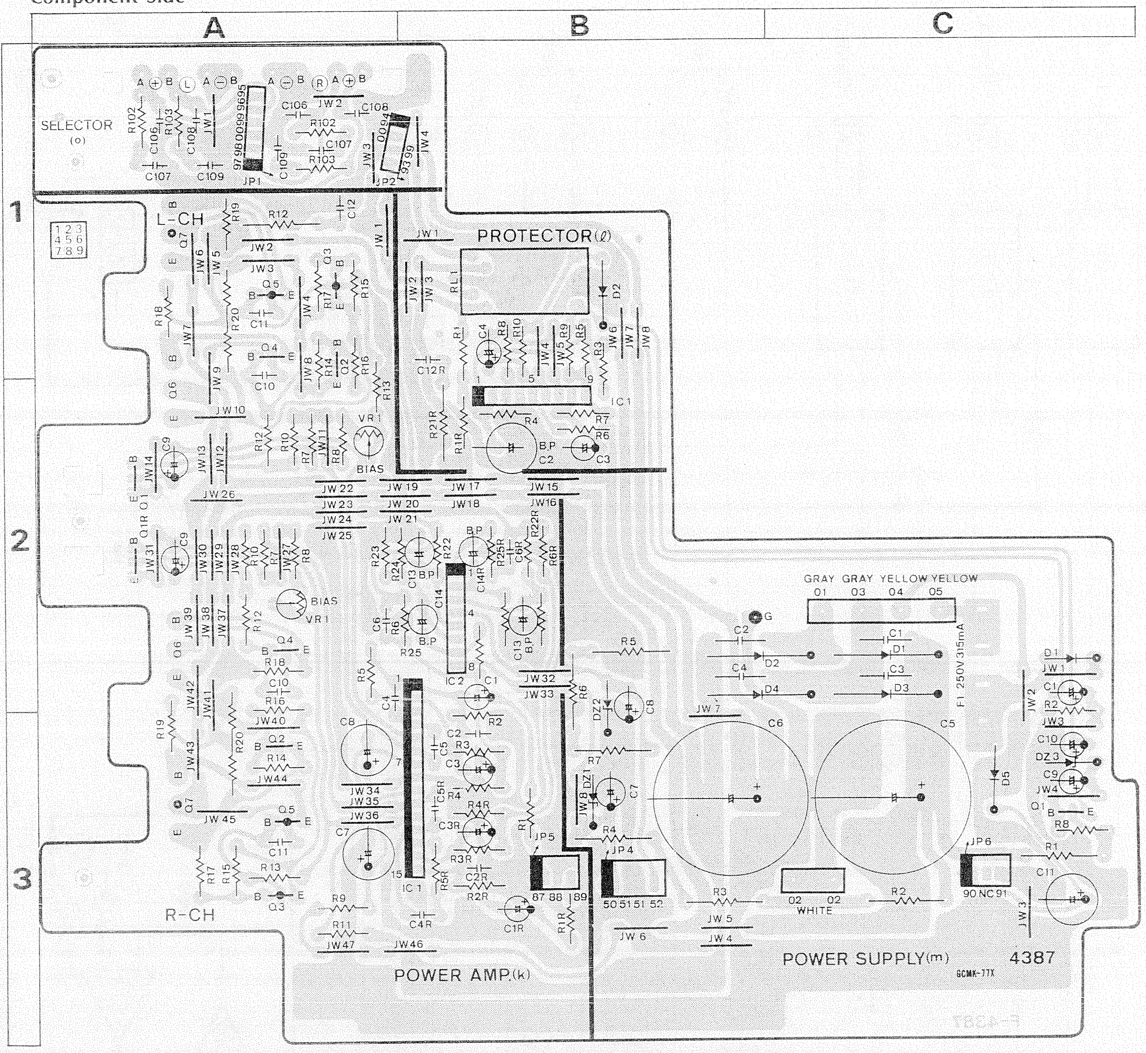
1. BLOCK DIAGRAM


PHONO
L-CH
MIC
oJ1
Equalizer
iIC1
RIAA
gQ1,2
TUNER
AUX/DAD
REC
TAPE 1
PLAY
REC
TAPE 2
PLAY
PHONO
oJ2
TUNER
oJ3
TAPE-1
oJ4
COMPU SELECTOR
oQ1~4
oQ5,6
oQ7~10
oIC2
16
17
18
19
15
21
2
3
4
5
14
13
12
11
10
R-CH
Muting
oQ13
oS1
PHONO
oS2
TUNER
oS3
AUX/DAD
oS4
TAPE-1
SELECTOR
+B
oIC1
9
6
8
3
5
4
oQ11
oQ15,16
oS7
oIC3
oS5
TAPE-2
Loudness
oS6
Volume
kIC1
kIC2
DC Servo
Power Amp
kVR1
Bias Volume
ℓIC1
Protector
Speakers
oS8
Speaker Out
oJ5
Phone
Control Amp
jIC1
jIC2
jVR1~5
GRAPHIC EQUALIZER
iIC 3~5
VDD(+)
VEE(−)
X5
oIC2
mLD1
mLD2
mLD3
mLD4
TAPE-2
oS5c
−12V

2. PARTS LOCATION & PARTS LIST

2-1. F-4387 Power Amp. Circuit Board (Stock No. 00769501)

Component Side


A
B
C
1
2
3
SELECTOR (o)
L-CH
R-CH
PROTECTOR(ℓ)
BIAS
VR1
IC1
IC2
GRAY GRAY YELLOW YELLOW
01 03 04 05
F1 250V 315mA
C6
C5
WHITE
POWER AMP.(k)
POWER SUPPLY(m)
4387
GCMK-77X

Parts List

Parts No.	Stock No.	Description
• Transistor		
⚠ kQ1	03067401	2SC1845
kQ2	46367101	2SC2603
	or 46367301	2SC2458
kQ3	46367001	2SA1115
	or 46367201	2SA1048
⚠ kQ4	07206401	2SD600K
⚠ kQ5	07206301	2SB631K
⚠ kQ6	46085301	2SC2581
⚠ kQ7	46085401	2SA1106
• IC		
kIC1	46921800	STK3082-2A
kIC2	46147700	M5218L
⚠ kR9	00135300	47Ω 1/2W N.I.R.
⚠ kR11	00130900	100Ω 1/2W N.I.R.
⚠ kR12	00135300	47Ω 1/2W N.I.R.
⚠ kR13	00135300	47Ω 1/2W N.I.R.
⚠ kR14	00130900	100Ω 1/2W N.I.R.
⚠ kR15	00130900	100Ω 1/2W N.I.R.
⚠ kR16	00133000	220Ω 1/2W N.I.R.
⚠ kR17	00133000	220Ω 1/2W N.I.R.
⚠ kR18	00132000	150Ω 1/2W N.I.R.
⚠ kR19	00132000	150Ω 1/2W N.I.R.
⚠ kR20	00091700	0.33Ω×2 5W, Ce.R.
⚠ kR21	46241200	10Ω 1W N.I.R.

Parts List

Parts No.	Stock No.	Description
kC12	08451000	10μF 16V E.B.
kC13	08450900	4.7μF 16V E.B.
kVR1	46633700	1kΩ S.V.R., Bias Volume
• IC		
lIC1	46207600	TA7317P
• Diode		
lD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
lD2	03117700	10E-2
lC2	08460200	220μF 6.3V E.B.
lRL1	46254900	Relay AP24D2
• Transistor		
⚠ mQ1	03067401	2SC1845
• Diode		
⚠ mD1	03115300	30D2
⚠ mD2	03115300	30D2
⚠ mD3	03115300	30D2
⚠ mD4	03115300	30D2
⚠ mD5	03117700	10E-2

Parts List

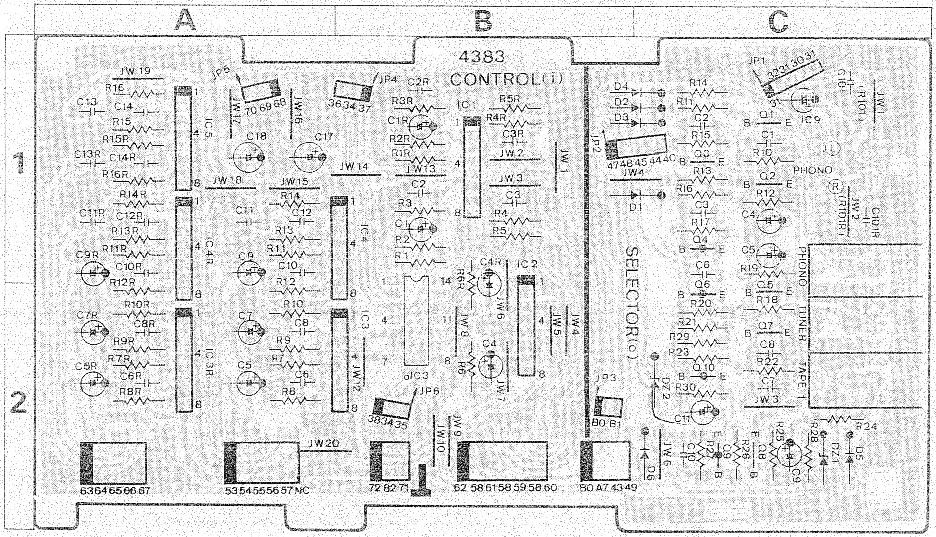
Parts No.	Stock No.	Description
•Zener Diode		
mDZ1	03170300	RD12FB
mDZ2	03170300	RD12FB
mDZ3	46116000	05Z24-Y
⚠ mR1	46243400	680Ω 1W N.I.R.
⚠ mR2	46624700	220Ω 2W N.I.R.
⚠ mR3	46624700	220Ω 2W N.I.R.
⚠ mR4	46624700	220Ω 2W N.I.R.
⚠ mR5	46624700	220Ω 2W N.I.R.
⚠ mR6	46624700	220Ω 2W N.I.R.
⚠ mR7	46624700	220Ω 2W N.I.R.

Parts List

Parts No.	Stock No.	Description
mC1	08680400	0.01μF 500V C.C.
mC2	08680400	0.01μF 500V C.C.
mC3	08680400	0.01μF 500V C.C.
mC4	08680400	0.01μF 500V C.C.
mC5	08301800	6800μF 63V E.C.
mC6	08301800	6800μF 63V E.C.
⚠ mF1	46201000	Fuse 315 mA 250V (XX, UL, CSA)
⚠	07184200	Fuse 315 mA 250V (EU, BS, AS)
	46364100	8P Speaker Terminal

2-2. F-4383 Control & Compu Selector Circuit Board (Stock No. 00769101)

Component Side



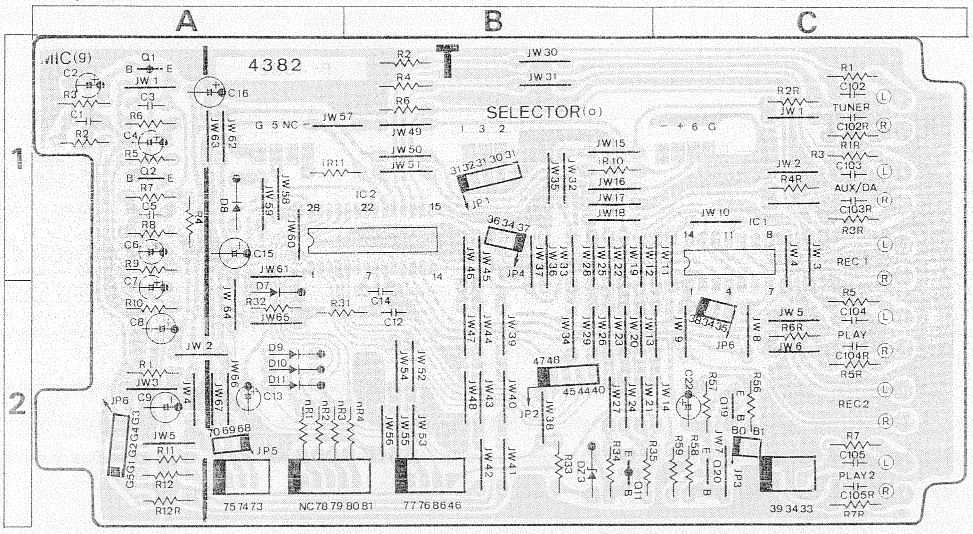
Parts List

Parts No.	Stock No.	Description
•IC		
jIC1	46147700	M5218L
jIC2	46147700	M5218L
jIC3	46147700	M5218L
jIC4	46147700	M5218L
jIC5	46147700	M5218L
•Transistor		
oQ1	46367101	2SC2603
	or 46367301	2SC2458
oQ2	46367101	2SC2603
	or 46367301	2SC2458
oQ3	46367101	2SC2603
	or 46367301	2SC2458
oQ4	46367001	2SA1115
	or 46367201	2SA1048
oQ5	46367101	2SC2603
	or 46367301	2SC2458
oQ6	46367001	2SA1115
	or 46367201	2SA1048
oQ7	46367101	2SC2603
	or 46367301	2SC2458
oQ8	46367101	2SC2603
	or 46367301	2SC2458
oQ9	46367001	2SA1115
	or 46367201	2SA1048
oQ10	46367001	2SA1115
	or 46367201	2SA1048

Parts No.	Stock No.	Description
•IC		
oIC3	46255000	LC4066BH
•Diode		
oD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD6	03117600	1S2473T77
	or 46086000	1S1588TP-3
•Zener Diode		
oDZ1	46111200	05Z 5.1-Y
oDZ2	46114200	05Z13-Y
oJ2	46547200	Mini Jack, PHONO
oJ3	46547200	Mini Jack, TUNER
oJ4	46547200	Mini Jack, TAPE-1
	46438100	2P Input Terminal, PHONO

2-3. F-4382 Input Selector SW & MIC AMP. Circuit Board (Stock No. 00769001)

Component Side


A
B
C
1
2
MIC(g)
4382
SELECTOR(o)
TUNER
AUX/DA
REC 1
PLAY
REC2
PLAY2
IC1
IC2
JP1
JP2
JP3
JP4
JP5
JP6
75 74 73
NC 78 79 80 81
77 76 86 46
39 34 33
47 48
45 44 40
36 34 37
38 34 35
31 32 31 30 31
70 69 68

Parts List

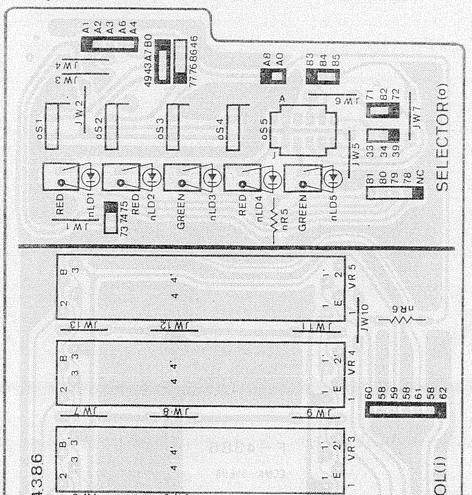
Parts No.	Stock No.	Description
•Transistor		
gQ1	46581601	2SA992
gQ2	46577801	2SC2320L
oQ11	46367201	2SA1048
	or 46367001	2SA1115
•IC		
oIC1	46255000	LC4066BH
oIC2	46394800	LC7815H

Parts List

Parts No.	Stock No.	Description
•Diode		
oD7	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD9	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD10	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD11	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD23	46114200	05Z13-Y7
	46363900	6P Input Terminal

2-4. F-4386 Function Switch Circuit Board (Stock No. 00769401)

Component Side

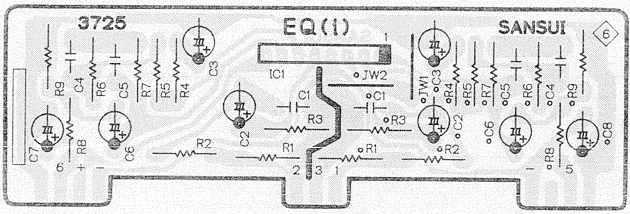

4386
SELECTOR(o)
CONTROL(i)
oS1
oS2
oS3
oS4
oS5
nLD1
nLD2
nLD3
nLD4
nLD5
RED
GREEN
VR1
VR2
VR3
VR4
VR5
nR5
nR6
49 43 A7 B0
77 76 86 46
63 64 65 66 67
73 74 75

Parts List

Parts No.	Stock No.	Description
jVR1	46834600	250kΩ Slide V.R., 80Hz
jVR2	46834600	250kΩ Slide V.R., 280Hz
jVR3	46834600	250kΩ Slide V.R., 1 kHz
jVR4	46834600	250kΩ Slide V.R., 3.5 kHz
jVR5	46834600	250kΩ Slide V.R., 12 kHz
•LED		
nLD1	46176900	TLS-123
	or 46470200	SEL2210S
nLD2	46176900	TLS-123
	or 46470200	SEL2210S
nLD3	07250900	TLG123A
	46470300	SEL2410E
nLD4	46176900	TLS-123
	or 46470200	SEL2210S
nLD5	07250900	TLG-123A
	or 46470300	SEL2410E
oS1	46396700	Push SW., PHONO
oS2	46396700	Push SW., TUNER
oS3	46396700	Push SW., AUX/PAD
oS4	46396700	Push SW., TAPE-1
oS5	46556300	Push SW., TAPE-2

2-5. F-3725 EQ. Amp. Circuit Board

Component Side

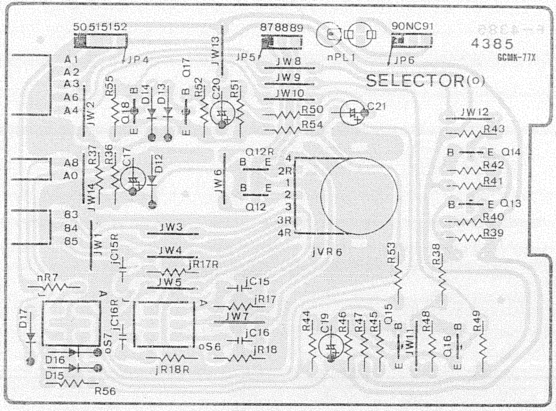

3725
EQ(1)
SANSUI
6
IC1
JW2
C1
R3
R1
R2
TW1
C2
C3
C4
C5
C6
C7
C8
R4
R5
R6
R7
R8
R9

Parts List <F-3725>

Parts No.	Stock No.	Description
•IC		
iIC1	46078900	M5218L

2-6. F-4385 Master Volume Circuit Board

Component Side

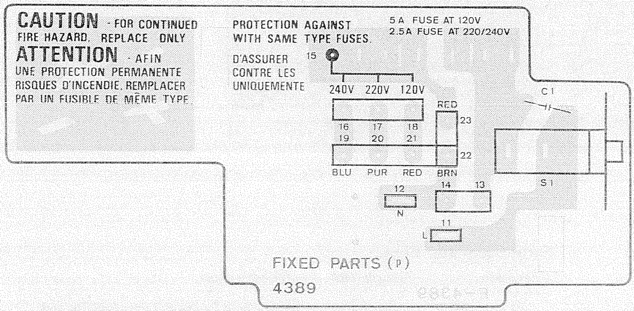

50515152
878889
90NC91
4385
GCMK-77X
SELECTOR(o)
jVR6
nPL1
JP4
JP5
JP6
JW1
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
JW11
JW12
JW13
JW14
Q12
Q13
Q14
Q15
Q16
Q17
Q18
D12
D13
D14
D15
D16
D17
oS6
oS7
nR7
R56

Parts List <F-4385>

Parts No.	Stock No.	Description
jVR6	46555900	150kΩ 3B × 2, VOLUME
•Transistor		
oQ12	46367301	2SC2458
	or 46367101	2SC2603
oQ13	46367201	2SA1048
	or 46367001	2SA1115
oQ14	46367201	2SA1048
	or 46367001	2SA1115
oQ15	46367201	2SA1048
	or 46367001	2SA1115
oQ16	46367201	2SA1048
	or 46367001	2SA1115
oQ17	46367201	2SA1048
	or 46367001	2SA1115
oQ18	46367201	2SA1048
	or 46367000	2SA1115
•Diode		
oD12	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD13	03117600	1S1473T77
	or 46086000	1S1588TP-3
oD14	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD15	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD16	03117600	1S2473T77
	or 46086000	1S1588TP-3
oD17	03117600	1S2473T77
	or 46086000	1S1588TP-3
oS6	46556400	Push SW, Loudness
oS7	46556400	Push SW, GRAPHIC EQUALIZER

2-7. F-4389 Voltage Selector Circuit Board

Component Side

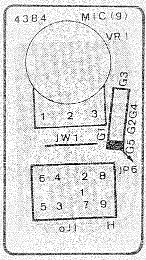

CAUTION - FOR CONTINUED FIRE HAZARD, REPLACE ONLY
ATTENTION - AFIN UNE PROTECTION PERMANENTE RISQUES D'INCENDIE, REMPLACER PAR UN FUSIBLE DE MÊME TYPE
PROTECTION AGAINST WITH SAME TYPE FUSES.
D'ASSURER CONTRE LES UNIQUEMENT
5A FUSE AT 120V
2.5A FUSE AT 220/240V
240V
220V
120V
RED
BLU
PUR
RED
BRN
C1
S1
FIXED PARTS (P)
4389

Parts List <F-4389>

Parts No.	Stock No.	Description
⚠ pC1	46425800	0.01μF 400V C.C.
⚠ pF1	07188700	Power Fuse 2.5A 250V (XX)
⚠	07189100	Power Fuse 5A 250V (UL, CS, XX)
⚠ pS1	46364300	Push SW., POWER

2-8. F-4384 MIC Volume Circuit Board

Component Side

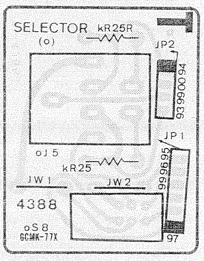

4384
MIC(9)
VR1
G3
G1
G5 G2G4
JW1
JP6
oJ1
H

Parts List

Parts No.	Stock No.	Description
gVR1	46834700	20kΩ, V.R., MIC Level
oJ1	46838700	MIC Jack

2-9. F-4388 Head Phone Jack Circuit Board

Component Side

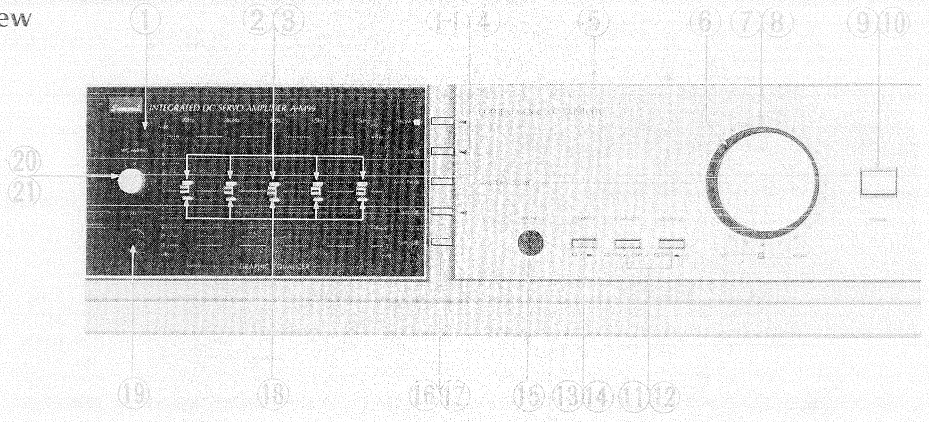

SELECTOR (o)
kR25R
JP2
JP1
93990094
999695
oJ5
kR25
JW1
JW2
4388
oS8
GCMK-77X
97

Parts List

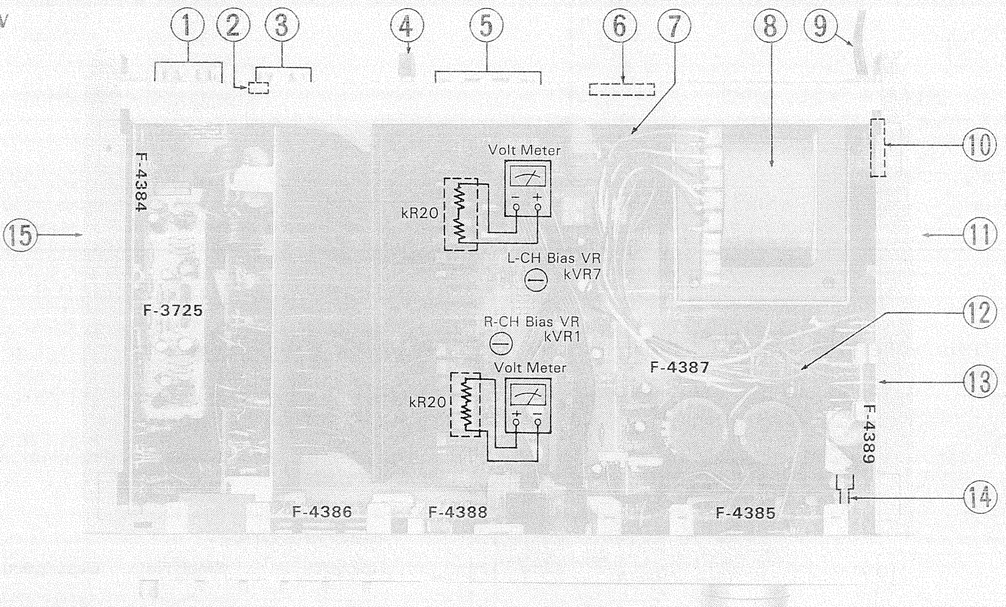
Parts No.	Stock No.	Description
oS8	46361000	Push SW., SPEAKERS
oJ5	24306200	Head Phone Jack

3. OTHER PARTS

3-1. Front View



3-2. Top View



Parts List <Front View>

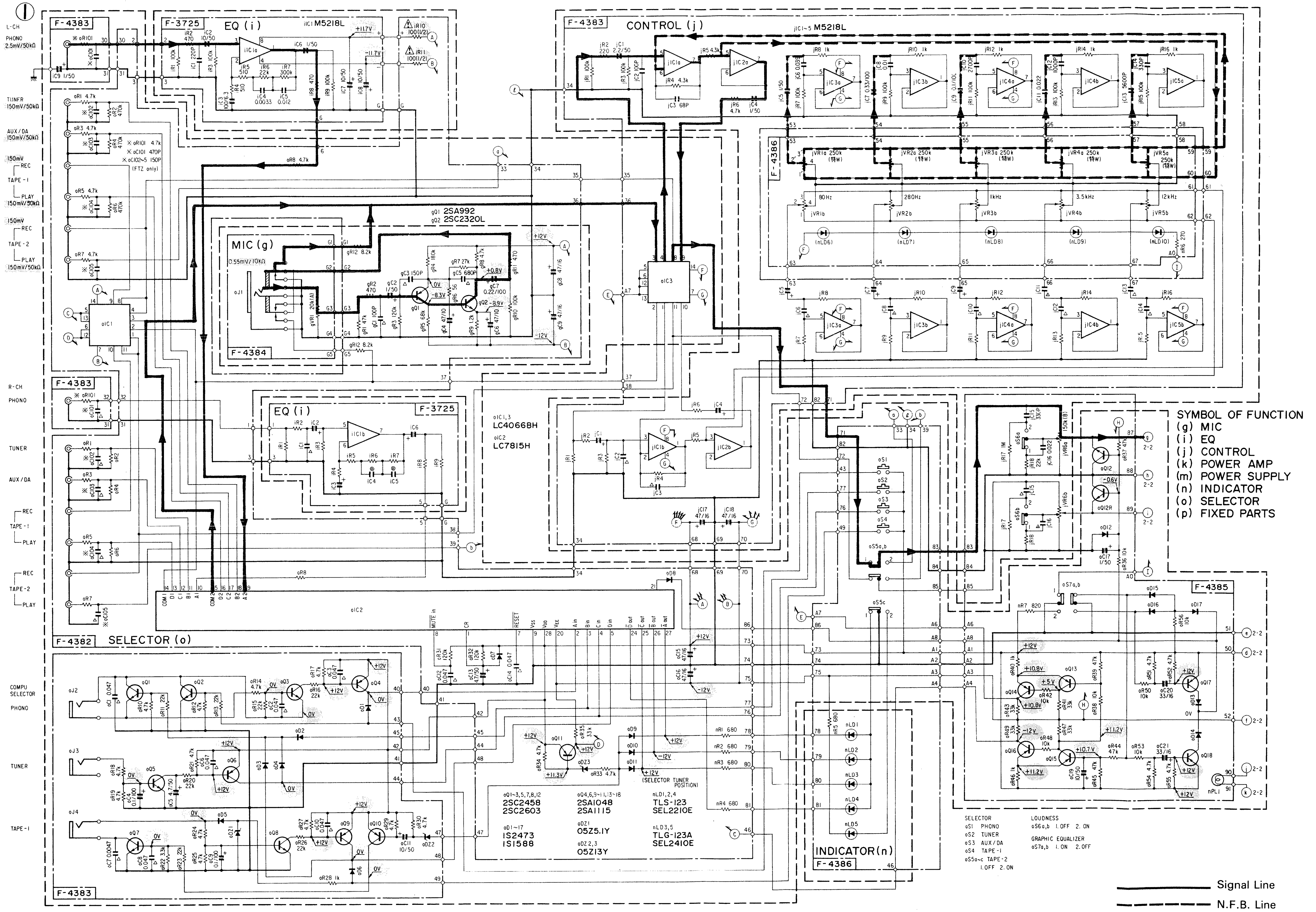
Parts No.	Stock No.	Description
1	47355700	Front Panel Ass'y (with Push Knob 1-1 , PHONO•TUNER•AUX/DA•TAPE)
2	47380300	Slide Knob, GRAPHIC EQUALIZER
3	46834600	250kΩ×2 Slide V.R., GRAPHIC EQUALIZER
4	46396700	Push SW., PHONO•TUNER•AUX/DA•TAPE-1
5	47464900	Bonnet (XX, UL, CS)
	47484800	Bonnet (EU, BS, AS)
6	47355500	Knob, MASTER VOLUME (Right)
7	47355400	Knob, MASTER VOLUME (Left)
8	46555900	150kΩ(B)×2 V.R., MASTER VOLUME
9	47157800	Push Knob, POWER
⚠10	46364300	Push SW., POWER
11	47351500	Push Knob, LOUDNESS•EQUALIZER
12	46556400	Push SW., LOUDNESS•EQUALIZER
13	47318300	Push Knob, SPEAKERS
14	46361000	Push SW., SPEAKERS
15	24306200	Jack, PHONES
16	47351400	Push Knob, TAPE-2
17	46556300	Push SW., TAPE-2
18	46176900	L.E.D TLS-123 (Red), GRAPHIC EQUALIZER
	or 46470200	L.E.D SEL2210S (Red),GRAPHIC EQUALIZER
19	46838700	Jack, MIC
20	47395500	Knob, MIC
21	46834700	20kΩ(A) V.R., MIC

Parts List <Top View>

Parts No.	Stock No.	Description
1	46363900	6P Input/Output Terminal Board, TUNER•AUX/DA•TAPE-1•TAPE-2
2	46547200	Mini Jack, COMPU SELECTOR
3	46438100	2P Input Terminal Board, PHONO
4	22301510	Ground Terminal
5	46364100	8P Output Terminal Board, SPEAKERS
⚠ 6	07204700	Slide SW., Voltage Selector (Eu•BS•AS)
⚠ 7	46365000	AC OUTLETS (XX•UL CSA)
⚠	46161000	AC OUTLETS (EU)
⚠	46364800	AC OUTLETS (BS)
⚠	46580600	AC OUTLET (AS)
⚠ 8	15014301	Power Transfomer (XX)
⚠	15014302	Power Transformer (UL•CSA)
⚠	15014305	Power Transformer (EU•BS•AS)
⚠ 9	38005700	Power Supply Cord (XX•UL)
⚠	46407700	Power Supply Cord (CSA)
⚠	38004500	Power Supply Cord (EU)
⚠	38004300	Power Supply Cord (BS)
⚠	07204200	Power Supply Cord (AS)
10	47157300	Cord Cover
11	47174920	Side Panel (Right)
⚠12	46201000	Fuse 315mA 250V (XX•UL•CSA)
⚠	07184200	Fuse 315mA 250V (EU•BS•AS)
⚠13	07189100	Fuse 5.0A 250V <120V> (XX•UL•CSA)
⚠	07188700	Fuse 2.5A 250V <220/240V> (XX)
⚠	07185000	Fuse 2.0A 250V (EU•BS•AS)
14	47351200	Joint Shaft
15	47174800	Side Panel (Left)

4. SCHEMATIC DIAGRAM 4-1. Pre Amp. Section

*Design and specifications subject to change without notice for improvement.
*La presention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
*Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


A
B
C
D
E
F
G
H
1
2
3
4
5
L-CH
PHONO 2.5mV/50kΩ
TUNER 150mV/50kΩ
AUX/DA 150mV/50kΩ
150mV REC
TAPE-1 PLAY 150mV/50kΩ
150mV REC
TAPE-2 PLAY 150mV/50kΩ
F-4383
F-3725
EQ (i)
iIC1 M5218L
CONTROL (j)
jIC1~5 M5218L
F-4386
MIC (g)
0.55mV/10kΩ
gQ1 2SA992
gQ2 2SC2320L
F-4384
oIC1
oIC3
R-CH
PHONO
TUNER
AUX/DA
REC TAPE-1 PLAY
REC TAPE-2 PLAY
oIC1,3 LC4066BH
oIC2 LC7815H
oIC2
F-4382
SELECTOR (o)
COMPU SELECTOR PHONO
TUNER
TAPE-1
oQ1~3,5,7,8,12 2SC2458 2SC2603
oQ4,6,9~11,13~18 2SA1048 2SA1115
nLD1,2,4 TLS-123 SEL2210E
oD1~17 1S2473 1S1588
oDZ1 05Z5.1Y
oDZ2,3 05Z13Y
nLD3,5 TLG-123A SEL2410E
INDICATOR (n)
F-4385
80Hz
280Hz
1kHz
3.5kHz
12kHz
jVR1a 250k (15W)
jVR2a 250k (15W)
jVR3a 250k (15W)
jVR4a 250k (15W)
jVR5a 250k (15W)
+12V
-12V
nPL1

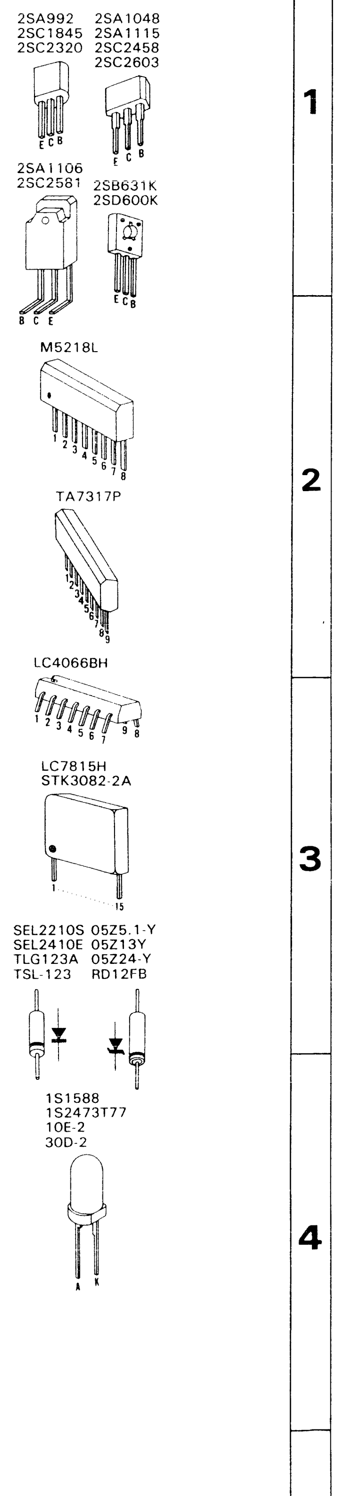
SYMBOL OF FUNCTION
(g) MIC
(i) EQ
(j) CONTROL
(k) POWER AMP
(m) POWER SUPPLY
(n) INDICATOR
(o) SELECTOR
(p) FIXED PARTS

SELECTOR
oS1 PHONO
oS2 TUNER
oS3 AUX/DA
oS4 TAPE-1
oS5a~c TAPE-2
1.OFF 2.ON

LOUDNESS
oS6a,b 1.OFF 2. ON

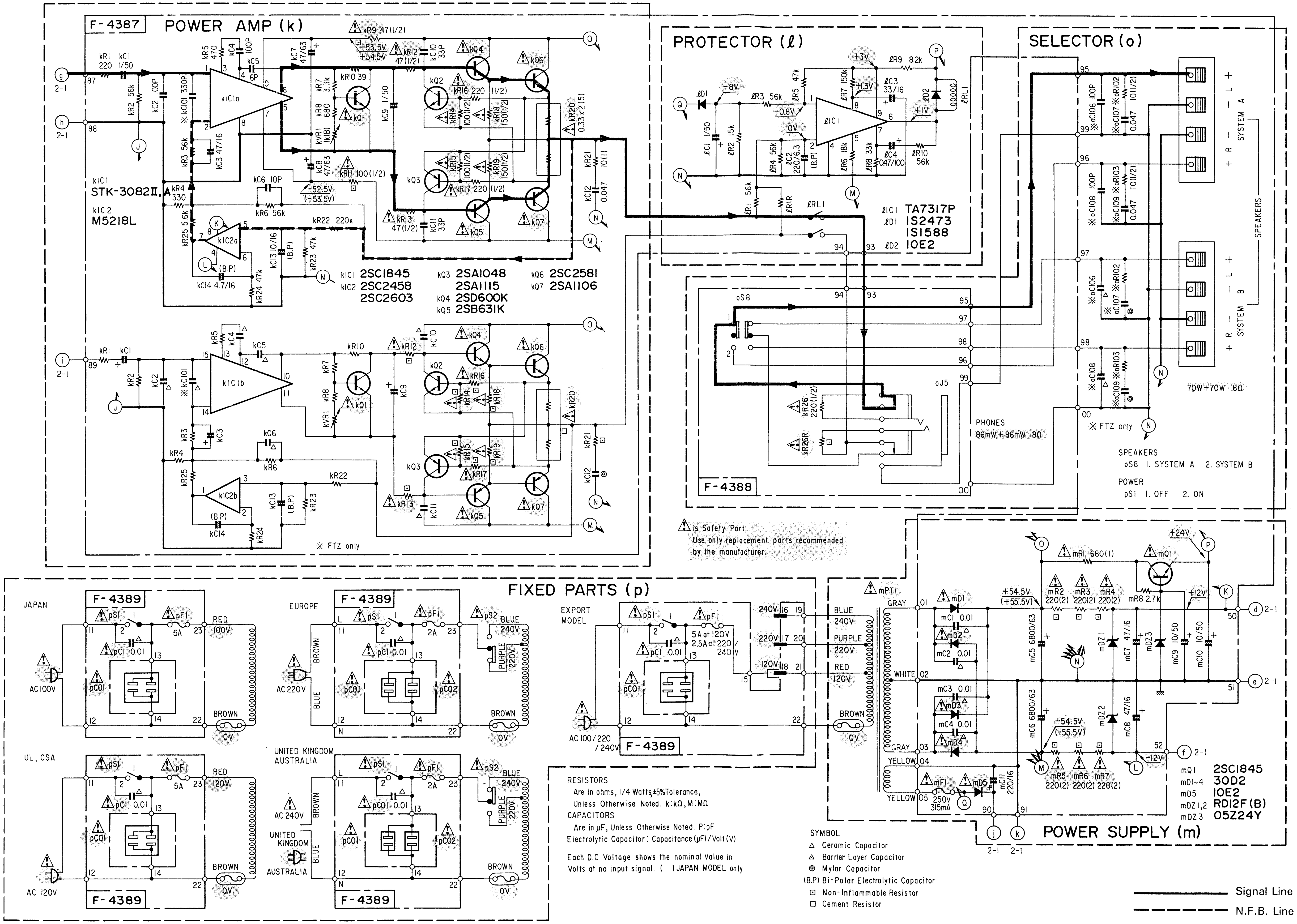
GRAPHIC EQUALIZER
oS7a,b 1.ON 2.OFF

Signal Line
N.F.B. Line


2SA992 2SC1845 2SC2320
2SA1048 2SA1115 2SC2458 2SC2603
E C B
2SA1106 2SC2581
B C E
2SB631K 2SD600K
E C B
M5218L
TA7317P
LC4066BH
LC7815H STK3082-2A
SEL2210S 05Z5.1-Y
SEL2410E 05Z13Y
TLG123A 05Z24-Y
TSL-123 RD12FB
1S1588 1S2473T77 10E-2 30D-2
A K

4-2. Power Amp. Section

*Design and specifications subject to change without notice for improvement.
*La présention et les specifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
*Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

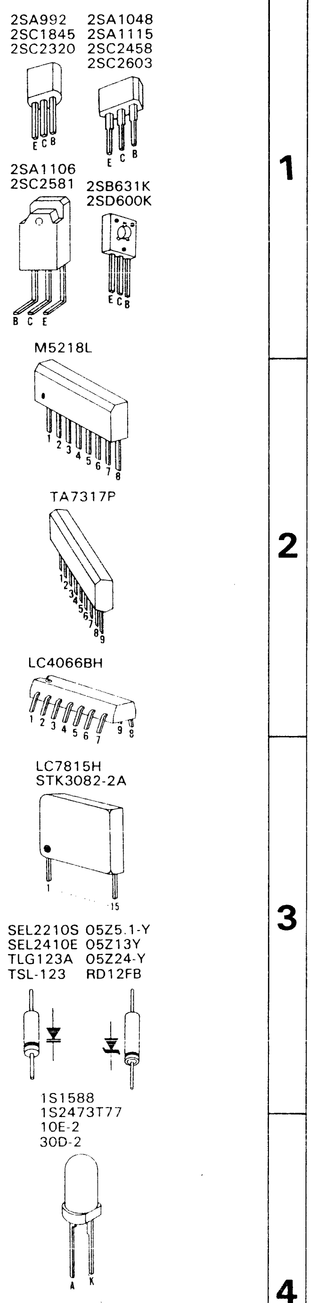

F-4387 POWER AMP (k)
kIC1 STK-3082II, A
kIC2 M5218L
kIC1 2SC1845
kIC2 2SC2458
2SC2603
kQ3 2SA1048
2SA1115
kQ4 2SD600K
kQ5 2SB631K
kQ6 2SC2581
kQ7 2SA1106
※ FTZ only
PROTECTOR (ℓ)
ℓIC1 TA7317P
ℓD1 1S2473
1S1588
ℓD2 10E2
SELECTOR (o)
SYSTEM A
SYSTEM B
SPEAKERS
70W+70W 8Ω
PHONES
86mW+86mW 8Ω
F-4388
※ FTZ only
SPEAKERS
oS8 1. SYSTEM A 2. SYSTEM B
POWER
pS1 1. OFF 2. ON
⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.
FIXED PARTS (p)
JAPAN
UL, CSA
EUROPE
UNITED KINGDOM AUSTRALIA
EXPORT MODEL
F-4389
AC 100V
AC 120V
AC 220V
AC 240V
UNITED KINGDOM
AUSTRALIA
AC 100/220/240V
POWER SUPPLY (m)
mQ1 2SC1845
mD1~4 30D2
mD5 10E2
mDZ1,2 RD12F(B)
mDZ3 05Z24Y

RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance,
Unless Otherwise Noted. k:kΩ, M:MΩ
CAPACITORS
Are in µF, Unless Otherwise Noted. P:pF
Electrolytic Capacitor: Capacitance (µF)/Volt (V)

Each D.C Voltage shows the nominal Value in Volts at no input signal. ( ) JAPAN MODEL only

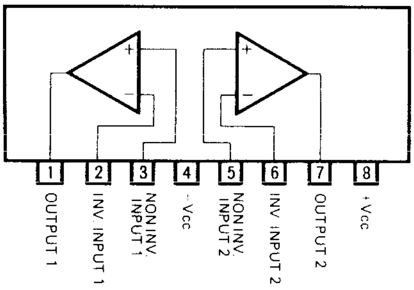
SYMBOL
- △ Ceramic Capacitor
- △ Barrier Layer Capacitor
- ◎ Mylar Capacitor
- (B.P) Bi-Polar Electrolytic Capacitor
- ⊡ Non-Inflammable Resistor
- ☐ Cement Resistor

——— Signal Line
– – – N.F.B. Line

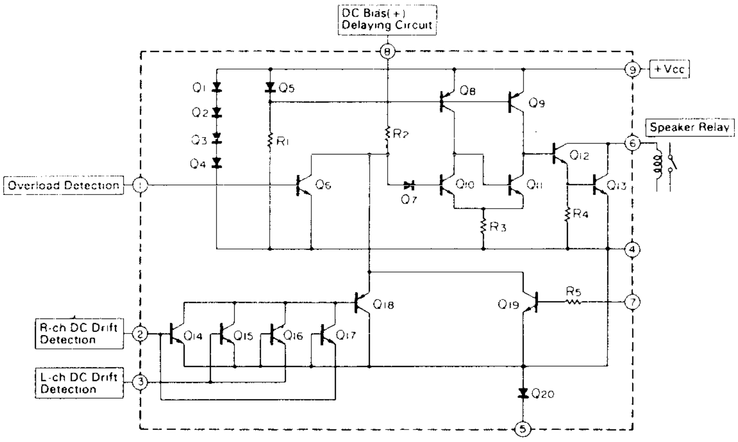

2SA992 2SA1048
2SC1845 2SA1115
2SC2320 2SC2458
2SC2603
2SA1106
2SC2581
2SB631K
2SD600K
M5218L
TA7317P
LC4066BH
LC7815H
STK3082-2A
SEL2210S 05Z5.1-Y
SEL2410E 05Z13Y
TLG123A 05Z24-Y
TSL-123 RD12FB
1S1588
1S2473T77
10E-2
30D-2

5. INTERIOR BLOCK DIAGRAM OF IC

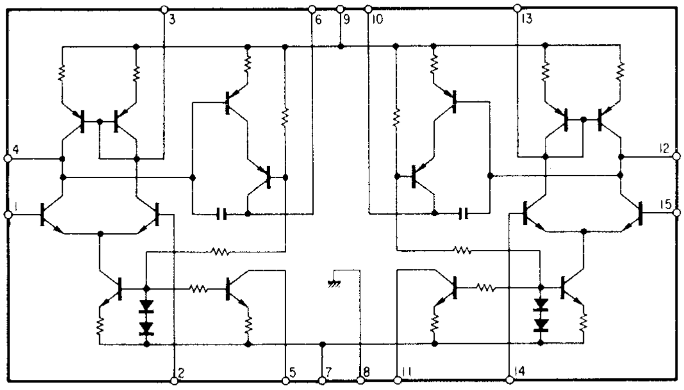
•M5218L (Audio PRE Amp. IC)


1 OUTPUT 1
2 INV. INPUT 1
3 NON INV. INPUT 1
4 -Vcc
5 NON INV. INPUT 2
6 INV. INPUT 2
7 OUTPUT 2
8 +Vcc

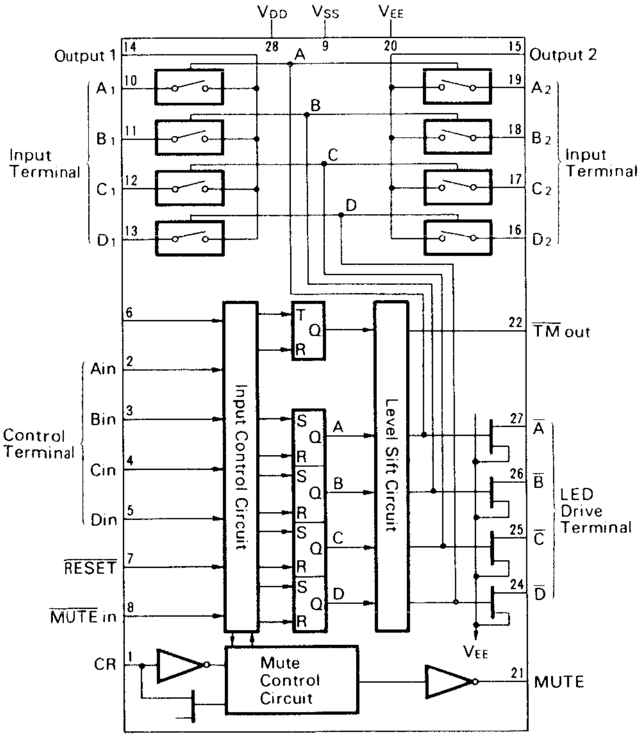
•TA7317P (Protector IC)


DC Bias(+) Delaying Circuit
+Vcc
Speaker Relay
Overload Detection
R-ch DC Drift Detection
L-ch DC Drift Detection
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
R1
R2
R3
R4
R5
1
2
3
4
5
6
7
8
9

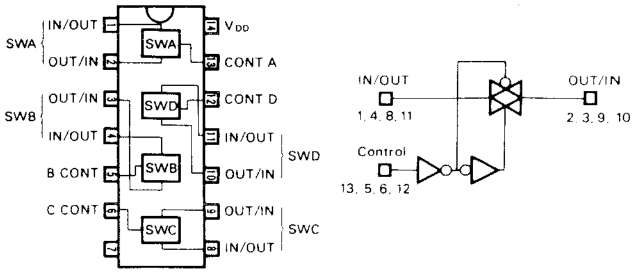
•STK3082-2A (Voltage Amplifier IC)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

•LC7815H Analog Function Switch IC


VDD
VSS
VEE
Output 1
Output 2
A1
B1
C1
D1
A2
B2
C2
D2
Input Terminal
Input Terminal
A
B
C
D
TM out
Ain
Bin
Cin
Din
Control Terminal
RESET
MUTE in
CR
Input Control Circuit
Level Sift Circuit
T
Q
R
S
Q
R
A
B
C
D
LED Drive Terminal
VEE
Mute Control Circuit
MUTE
14
28
9
20
15
10
19
11
18
12
17
13
16
6
22
2
3
4
5
7
8
1
27
26
25
24
21

•LC4066BH Quad Bilateral Switch IC


SWA
IN/OUT
OUT/IN
SWB
OUT/IN
IN/OUT
B CONT
C CONT
VDD
CONT A
CONT D
IN/OUT
OUT/IN
SWD
OUT/IN
IN/OUT
SWC
SWA
SWD
SWB
SWC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
IN/OUT
1, 4, 8, 11
OUT/IN
2, 3, 9, 10
Control
13, 5, 6, 12

*LC7815H

Condition of control input terminals Port (Pin No.)				Connected input terminal to output 1 and 2 terminals		Connected terminal to LED indicator
Ain (2)	Bin (3)	Cin (4)	Din (5)	PORT (Pin No.)	PORT (Pin No.)	PORT (Pin No.)
H	*	*	*	A1 (10)	A2 (19)	A (27)
L	H	*	*	B1 (11)	B2 (18)	B (28)
L	L	H	*	C1 (12)	C2 (17)	C (25)
L	L	L	H	D1 (13)	D2 (16)	D (24)

H: H level L: L level *: Don't care

6. BIAS CURRENT ADJUSTMENT (See Top View on Page 7)

Note:

1. Room Temperature .... 18°C ~ 28°C
2. For adjustment, run the unit for more than 3 minutes after the power is switched on.
3. Before turning ON POWER switch, turn kVR1 on F-4387 fully counterclockwise.

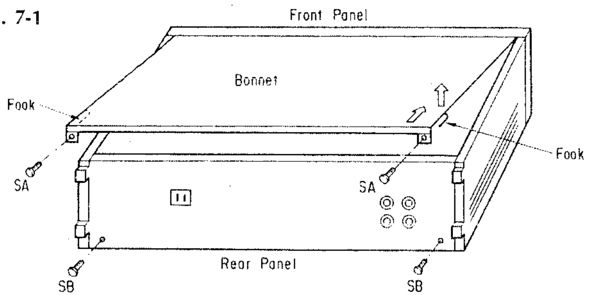
STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	L-CH	Connect DC volt meter between emitters of kQ6, kQ7 on F-4387	kVR1 (L-CH) F-4387	DC 3.3mV	This bias current adjustment converts current value into voltage by ohms law
2.	R-CH	Same as above	kVR1 (R-CH) F-4387	DC 3.3mV	

7. MAIN PARTS REPLACEMENT

A. Bonnet (See Fig. 7-1)

1) Remove two screws SA.
2) Push the rear side of the bonnet to remove the hooks and then remove bonnet.

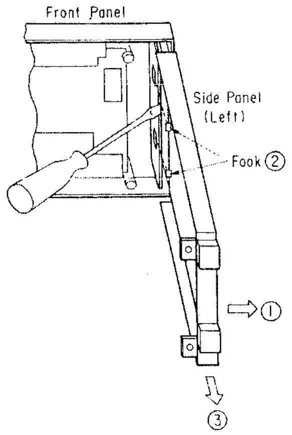
Fig. 7-1



B. Side Panel L(R) (See Fig. 7-1 & 7-2)

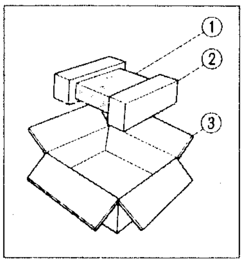
1) Remove the bonnet and two screws SB.
2) Shift the position of the side panel L(R) 1.5 cm in the arrow direction.
3) Remove the hooks ② of the side panel from front panel and then pull it to the arrow direction ③ to remove the side panel L(R) (Fig. 7-2).

Fig. 7-2



8. PACKING LIST

Parts No.	Stock No.	Description
1	09453300	Vinyl Cover
2	47187620	Styrofoam Packing
3	47355200	Carton Case



9. ACCESSORY LIST

Parts No.	Stock No.	Description
1	46797700	Operating Instruction

Sansui

SANSUI ELECTRIC CO., LTD.:	14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION:	1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A. 17150 South Margay Ave. Carson, California 90746 U.S.A. 3306 Koapaka 5t. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.:	Unit 10A, Lyon Industrial Estate, Rockware Avenue, Geenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.:	Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany

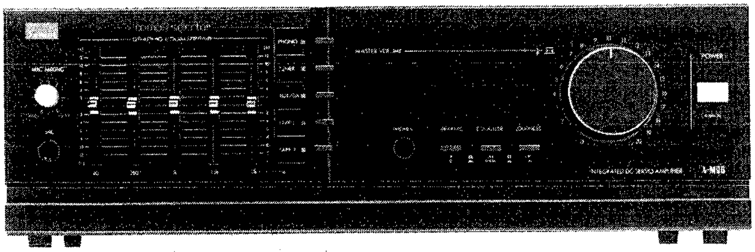
(SM1-112) Printed in Japan (930620M) <Stock No. 36484400>

SERVICE MANUAL

INTEGRATED SERVO AMPLIFIER

SANSUI A-M90

(Black Model)



NOTE
A-M90 (Black Model) is additional models which external appearances are different from those of A-M99. This manual contains OTHER PARTS LIST, PACKING LIST and ACCESSORY LIST in which changed parts are printed with bold-face.
For other parts list, refer to A-M99 service manual previously issued.

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

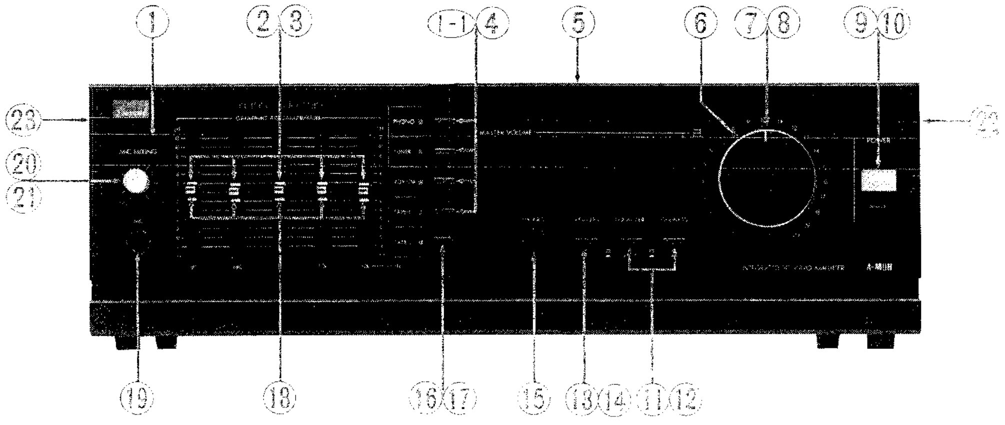
Power output
Min. RMS, both channels driven, from 20 to 20,000 Hz with no more than 0.07% total harmonic distortion.
70 watts per channel into 8 ohms.

Load impedance	8 ohms
Total harmonic distortion	less than 0.07% at or below rated min. RMS power output
Frequency response (at 1 watt)	10 to 60,000 Hz/+0.5 dB, −2 dB
RIAA curve deviation (PHONO, 30 Hz to 20 kHz)	+0.5 dB, −0.5 dB
Input sensitivity and impedance (1 kHz, for rated power output))	
PHONO	2.5 mV/47 kilohms
(Max. input capability: 150 mV at 1 kHz, less than 0.5% total harmonic distortion)	
TUNER, TAPE PLAY (1, 2), AUX/DA	150 mV/47 kilohms
MIC	0.5 mV/10 kilohms
Output level (1 kHz)	
TAPE REC	150 mV into 47 kilohms
Signal to noise ratio (short-circuit, A-network)	
PHONO	72 dB
TUNER, TAPE PLAY (1, 2), AUX/DA	100 dB
Power requirements	
Power voltage	120/220/240 V (50/60 Hz)
For U.S.A. & Canada	120 V (60 Hz)
Power consumption	230 watts 280 VA Rated 350 watts Maximum
Dimensions	345 mm (13-5/8") W 111 mm (4-3/8") H 234 mm (9-1/4") D
Weight	5.4 kg (11.9 lbs.) net 6.2 kg (13.7 lbs.) packed

* Design and specifications subject to change without notice for improvements.

1. OTHER PARTS

- Front View

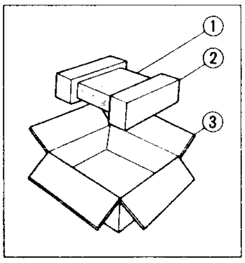


Parts List

Parts No.	Stock No.	Description
1	47560700	Front Panel Ass'y (with Push Knob 1-1, PHONO•TUNER•AUX/DA•TAPE)
2	47380300	Slide Knob, GRAPHIC EQUALIZER
3	46834600	250kΩ×2 Slide V.R., GRAPHIC EQUALIZER
4	46396700	Push SW., PHONO•TUNER•AUX/DA•TAPE-1
5	47560400	Bonnet (XX, UL, CSA)
	47560500	Bonnet (EU, BS, AS)
6	47557200	Knob, MASTER VOLUME (Right)
7	47557100	Knob, MASTER VOLUME (Left)
8	46555900	150kΩ(B)×2 V.R., MASTER VOLUME
9	47157800	Push Knob, POWER
⚠10	46364300	Push SW., POWER
11	47560300	Push Knob, LOUDNESS•EQUALIZER
12	46556400	Push SW., LOUDNESS•EQUALIZER
13	47538200	Push Knob, SPEAKERS
14	46361000	Push SW., SPEAKERS
15	24306200	Jack, PHONES
16	47560200	Push Knob, TAPE-2
17	46556300	Push SW., TAPE-2
18	46176900	L.E.D TLS-123 (Red), GRAPHIC EQUALIZER
	or 46470200	L.E.D SEL2210S (Red), GRAPHIC EQUALIZER
19	46838700	Jack, MIC
20	07779920	Knob, MIC
21	46834700	20kΩ(A) V.R., MIC
22	47491000	Side Panel (Right)
23	47490910	Side Panel (Left)

2. PACKING LIST

Parts No.	Stock No.	Description
1	09453300	Vinyl Cover
2	47187630	Styrofoam Packing
3	47558100	Carton Case



3. ACCESSORY LIST

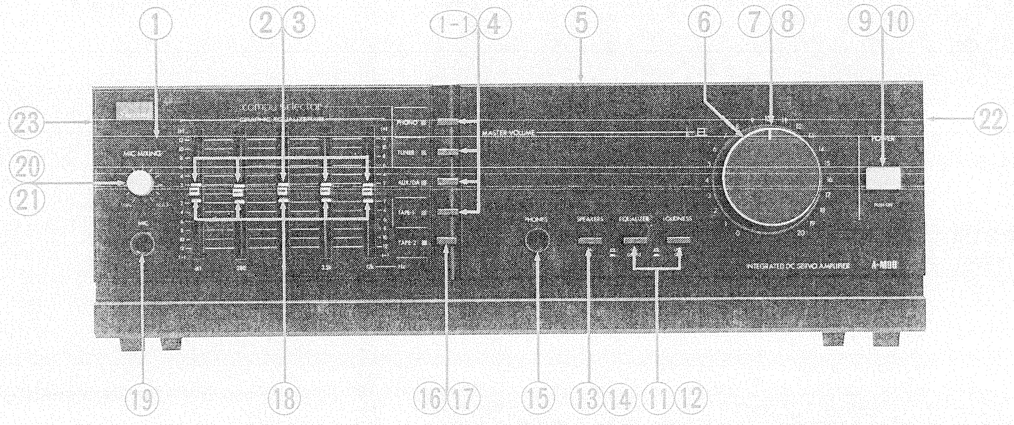
Parts No.	Stock No.	Description
	46952400	Operating Instruction
	46953700	Operating Sheet

SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Geenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.: Pau Ehrich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-155) Printed in Japan (240620M) <Stock No. 36493700>

1. OTHER PARTS

•Front View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1-1④
⑤
⑥⑦⑧
⑨⑩
㉓
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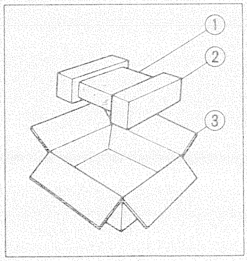
㉒
compu selector
MASTER VOLUME
PHONO
TUNER
AUX/DA
TAPE-1
TAPE-2
MIC MIXING
PHONES
SPEAKERS
EQUALIZER
LOUDNESS
POWER
INTEGRATED DC SERVO AMPLIFIER
A-M90
⑲
⑱
⑯⑰
⑮
⑬⑭
⑪⑫

Parts List

Parts No.	Stock No.	Description
1	47560700	Front Panel Ass'y (with Push Knob 1-1, PHONO•TUNER•AUX/DA•TAPE)
2	47380300	Slide Knob, GRAPHIC EQUALIZER
3	46834600	250kΩ×2 Slide V.R., GRAPHIC EQUALIZER
4	46396700	Push SW., PHONO•TUNER•AUX/DA•TAPE-1
5	47560400	Bonnet (XX, UL, CSA)
	47560500	Bonnet (EU, BS, AS)
6	47557200	Knob, MASTER VOLUME (Right)
7	47557100	Knob, MASTER VOLUME (Left)
8	46555900	150kΩ(B)×2 V.R., MASTER VOLUME
9	47157800	Push Knob, POWER
⚠10	46364300	Push SW., POWER
11	47560300	Push Knob, LOUDNESS•EQUALIZER
12	46556400	Push SW., LOUDNESS•EQUALIZER
13	47538200	Push Knob, SPEAKERS
14	46361000	Push SW., SPEAKERS
15	24306200	Jack, PHONES
16	47560200	Push Knob, TAPE-2
17	46556300	Push SW., TAPE-2
18	46176900	L.E.D TLS-123 (Red), GRAPHIC EQUALIZER
	or 46470200	L.E.D SEL2210S (Red), GRAPHIC EQUALIZER
19	46838700	Jack, MIC
20	07779920	Knob, MIC
21	46834700	20kΩ(A) V.R., MIC
22	47491000	Side Panel (Right)
23	47490910	Side Panel (Left)

2. PACKING LIST

Parts No.	Stock No.	Description
1	09453300	Vinyl Cover
2	47187630	Styrofoam Packing
3	47558100	Carton Case



3. ACCESSORY LIST

Parts No.	Stock No.	Description
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